

C3 39. (Amended) The electrode structure as claimed in claim 38, wherein at least one of said electrode-side heat transfer space, and said chuck-side heat transfer space is provided with a heat resistant pressure sensor, and an amount of gas supplied by said corresponding heat transfer gas supply means is controlled based on an output of the heat resistant pressure sensor.

See the attached Appendix for the changes made to effect the above-amended claims.

Please add the following new claim:

C4 46. (New) An electrode structure used in a plasma processing apparatus which performs a predetermined process on an object to be processed by using a plasma in a process chamber in which a vacuum can be formed, the electrode structure comprising:
an electrode unit having a heater unit therein;
a cooling block joined to the electrode unit and having a cooling jacket which cools said electrode unit;
a labyrinth heat transfer space formed of a groove provided on at least two adjoining surfaces; and
electrode-side heat transfer gas supply means for supplying a heat transfer gas to said labyrinth heat transfer space. --